

XVIII. *Odonata collected by LT.-COLONEL NURSE, chiefly in North - Western India.* By KENNETH J. MORTON, F.E.S.

[Read April 10th, 1907.]

PLATE XXIV.

I AM indebted to Lieutenant-Colonel Nurse for allowing me to examine a collection of *Odonata* made by him chiefly in North-Western India. The localities whence the insects came are Deesa in the province of Gujerat, Quetta, Kashmir, and there is one species each from Simla and from Lahij in Arabia. The collection is of special interest on account of the presence, amongst the material from Quetta and Kashmir, of a number of species characteristic of the Mediterranean region, and even of some which are of more northerly type. The species from Deesa are more tropical in character.

In connection with the *Libellulinae* I have had the benefit of invaluable assistance from Dr. Ris, all the more important species in that sub-family having been determined or verified by him, and he also gave me much general information concerning them.

In dealing with the smaller species I have thought it indispensable to give figures of the appendages of the species I have described as new. To these I have added figures of some others, which I have referred to Selysian species, in order that there may be no uncertainty about the identity of the species I had before me.

LIBELLULINÆ.

Sympetrum fonscolombii, Selys.—Quetta, July; Kashmir, 5000–6000 ft., June. A wide-ranging species which does not appear to tend to split up into geographical races.

S. decolorata, Selys.—A very interesting series from Quetta in June. Dr. Ris assures me these conform to the types of *decolorata* in the Selys Collection, although it was there mixed with specimens of *meridionalis* and pale-coloured *striolatum*. Quite distinct-looking from *vulgatum*, which it probably entirely replaces in the area

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which it inhabits, *S. imitans* from Amurland being another race.

S. striolatum, Charp.—Quetta, July; Kashmir, 5000–6000 ft., May. Differing little from Central European specimens; probably from its utmost south-eastern limit.

S. commixtum, Selys.—Deesa, July, 1 ♀. This takes the place of *S. striolatum* in the warmer parts of India.

Trithemis pallidinervis, Kirby.—Deesa, October. A rather common species in Ceylon, India, etc. Described by Kirby as a *Diplax* (*Sympetrum*).

T. festiva, Rambur.—Quetta, June. A small form of this wide-ranging species.

Crocothemis servilia, Drury.—Dr. Ris is disposed, chiefly as a matter of convenience, to reserve this name for the Eastern forms of this insect, *i. e.* those from tropical India, Ceylon, South China and the Archipelago (and even those from Japan which are rather different), which have the wings somewhat longer and narrower and tipped with brown. In *C. erythraea* from Africa, Madagascar, Southern Europe to Asia and Kashmir, the wings are relatively shorter and broader and not tipped with brown. In Northern India intermediates occur. Specimens from Deesa, January, February, June, July and October, are to be referred to the Eastern type, while a ♂ from Quetta, June, is Western. A somewhat general specimen from Kashmir, 5000–6000 ft., May.

Libellula quadrimaculata, Lin.—Kashmir, 8000–9000 ft., June. Already recorded from Kashmir. In these specimens the nodal spots are small, and, as Dr. Calvert has pointed out in connection with ♂♂ taken in Kashmir by Dr. Abbott, the black of the basal spot on the hind-wings does not extend into the triangle.

Orthetrum sabina, Drury.—Deesa, February, June, July and October. Another wide-ranging species. Examples from India are as a rule small.

O. chryso stigma, Burm.—Lahij, May, 3 ♂♂. A difficult species running into geographical forms. Ris says these specimens are intermediate between East African specimens and the following:—

O. chryso stigma, race *luzonicum*, Brauer.—Deesa, October. Brauer's types are from the Philippines.

O. brunneum, Fonsc.—Quetta, May; Kashmir, 5000–6000 ft., May. Hardly different from Swiss and South European specimens.

O. ramburii, Selys.—Recorded from the Mediterranean region, from Asia Minor, Transcaucasia and Syria; a series from Quetta (June) is very interesting. This species seems to take the place of *O. cærulescens* in the countries where it occurs.

O. tenuolatum, Schn.—Deesa, January and August. Another interesting Mediterranean species recorded by Selys from Rhodes, Cyprus and Syria (Odonates de l'Asie Mineure). Dr. Ris informs me that it is also the *O. anceps* of Selys (Beyrout) and the *O. hyalinum* of Kirby.

O. internum, McLach.—Kashmir, 5000–6000 ft., May.

O. pruinosum, Burm., race *neglectum*, Ramb.—Murree Road, Kashmir, 4000 ft., June. Dr. Ris considers that the red Indian species of *Orthetrum*, *pruinosum*, *clelia* and *neglectum* are geographical forms of one species, *neglectum* being the form found in Ceylon and the Continent from India to South China.

Diplacodes nebulosa, Fab.—Deesa, October.

Acisoma panorpoides, Ramb.—Deesa, October.

GOMPHINÆ.

Onychogomphus lineatus, Selys.—Quetta, June. Several females and mutilated males from Deesa, July, August, and October, probably appertain to the same species.

Thecagaster brevistigma, Selys.—Two ♂♂, Simla, May.

ÆSCHNINÆ.

Anax parthenope, Selys.—Kashmir, 5000–6000 ft., May. Well known from Kashmir. Calvert has pointed out that examples from that region agree rather with European than with Japanese individuals.

Hemianax ephippiger, Burm.—Colonel Nurse says: "This species was in thousands at Quetta in June 1903. I never saw so many dragonflies anywhere." A wide-ranging species of migratory tendencies.

CALOPTERYGINÆ.

Epallage fatima, Charp.—Quetta, 2 ♂♂, June. Smaller than examples I have from Asia Minor, but I can detect no material differences otherwise.

AGRIONINÆ.

Platynemis latipes, Ramb., race *dealbata*, Selys.—Quetta, June.

Ischnura elegans, Van der Lind.—Quetta, May and June.

I. forcipata, n. sp.

♂. Labrum blueish; epistoma above black with metallic sheen; frons including two basal joints of antennæ greenish; head above bronzed black, with small blue postocular spots.

Prothorax bronzed black, broadly greenish laterally, with an irregular isolated green spot which runs to a point anteriorly; posterior margin slightly elevated, the middle forming a moderate sub-acute lobe wider than high, narrowly outlined with green.

Thorax above bronzed black with well-marked uninterrupted shoulder lines and a very short black line under anterior wings.

Legs yellowish, femora black externally with a short black streak at the base of the tibiæ.

Abdomen with segments 1-7 bronzed black above, with narrow pale sutures; segments 8-10 dark blue above, 10 with a large black sub-quadrate dorsal patch; the raised lobe tinged with blue and distinctly excised.

The superior appendages very large; seen from above, they are in the upper part sickle-shaped and black, the lower inner portion paler, clothed rather densely with hairs; beneath, these appendages are continued into long finger-shaped processes black at the apex. The inferior appendages are separated at the base where they are broadest; they are regularly curved inwards, narrowing to the apex which is black; seen from the side, they are strongly upturned.

Wings hyaline; fore-wing with 8 post-nodals; pterostigma oblique, narrower in front than behind, hind-margin slightly curved, bright blue in outer half, black inwardly; pterostigma in hind-wings much smaller, nearly diamond-shaped, pale yellowish.

Length of hind-wing, 13 mm.; of abdomen, 22 mm.

Quetta, June 1902.

I. delicata, Selys.—Deesa, January, February, July and September.

Ischnura? nursei, n. sp.

♂. Epistoma above dark, bronzed; frons to the antennæ pale, slightly reddish; 1-3 joints of antennæ also pale; rest of head, above, bronzed black.

Prothorax with hind-margin regularly rounded, bronzed black, paler at sides which are slightly pruinose.

Thorax bronzed black above, sometimes with narrow shoulder stripes. Legs reddish with black streaks on tibiae of two anterior pairs.

Abdomen short and rather stout; segments 1-4 above carmine ("dark reddish-purple," Nurse), 2 darkly marked at the base, 3, 4 with slight transverse dark streaks before the apex which is also narrowly dark; 5 lemon-yellow with similar dark markings; 6 yellowish or reddish in anterior half; remainder of abdomen metallic violet, the posterior part of the last segment and the appendages reddish. Apex of last segment only very slightly raised, but seen from above there is a very distinct and wide excision bounded on either side by a small projecting process.

Superior appendages seen from above, shorter than inferior, broad, obliquely truncate, posteriorly abruptly turned downwards and terminating in an acute point. Inferior appendages seen from the side, broad at the base, narrowing to the apex, upper margin nearly straight, inferior margin sinuous; seen from beneath they are rather widely separated at the base, but there are pale inner processes which nearly meet; viewed from above they are concave, curved inwards in their upper part which is armed with a small black dentate plate.

Wings hyaline; neuration reddish. Pterostigma in fore-wings diamond-shaped, bright carmine inwardly, paler externally; pterostigma in hind-wings small, yellow.

Length of hind-wing, 12 mm.; of abdomen, $16\frac{1}{2}$ mm.

Deesa, October, November and January.

This is not a true *Ischnura*, although referred provisionally to the genus in the absence of the ♀. It differs in the relatively short and stout abdomen, and in the absence of postoculars.

There are 3 ♀♀ from Kashmir, 5000-6000 ft., May, which may belong to *Ischnura rufostigma*, Selys. They recall *Pyrrhosoma tenellum*, but the thorax is paler. In the meantime, in the absence of the ♂, the determination is uncertain.

Enallagma cyathigerum, Charp.—Kashmir, 5000-6000 ft., May.

Enallagma? parvum, Selys.—Deesa, June and October.

Pseudagrion decorum, Ramb.—Deesa, June, July, August, October and November.

P. hypermelas, Selys.—Deesa, January and February.

P. bidentatum, n. sp.

♂. Discoloured; colours very likely blue and bronzed black.

Labrum reddish; epistoma above black, frons reddish, vertex black with very large triangular bluish postocular spots connected by a distinct transverse line.

Prothorax pale marked with black.

Thorax above with a black line on either side of the median suture and black shoulder stripes, otherwise blue.

Legs yellow; femora of anterior distinctly marked with black externally, others faintly marked.

Abdomen above with black-bronzed markings margined with blue. 1 with a large sub-quadrate spot; 2 with thistle-shaped marking connected with a black apical line; 3-6 with elongate markings broadest before the apex; in 3 reaching the base, in 4, 5, 6 markings more lanceolate not reaching the base; 7, 8, 9 probably all bronzed black with narrow blue sutures; 10 black.

Superior appendages seen from side nearly straight above, terminating in a black, slightly-down-turned hook, from the hook the posterior margin curves strongly inwards, the lower margin being produced into a strong tooth which from above is seen to be bifid. Inferior appendages short and rounded.

Length of hind-wing, $16\frac{1}{2}$ mm.; of abdomen, 23.75 mm.

Deesa, February, 1 ♂

Ceriagrion coromandelianum, Fabr.—Deesa, February, August and October.

Agriocnemis pygmaea, Ramb.—Deesa, July.

Lestes barbara, Fabr.—Kashmir, 5000-6000 ft., May.

L. gracilis, Selys.—Deesa, October; a single ♀ referred here with slight doubt.

Sympycna fusca, Eversm.—Quetta, June, 1 ♂.

EXPLANATION OF PLATE XXIV.

[See *Explanation facing the PLATE.*]